

Preface

Optimum care of diabetic populations depends upon adequate supplies of insulin and inclusive access to care.

The capstone team designed a hypothetical insulin glargine manufacturing facility in Singapore to target the rise of diabetes cases in Asian-Pacific countries. As designed, the plant would have a calculated production capacity sufficient to supply 4 percent of the diabetics of the region. High prices and distribution constraints limit access to insulin in developing countries. The process as designed combines upstream and downstream properties calculated to produce 35.54 kg of insulin glargine per batch, an overall process yield of 48.96 percent. Such a production capacity would yield sufficient insulin glargine to supply Asian-Pacific countries. Further research is needed to determine how best to distribute the insulin glargine product regionally.

In the United States, marginalized populations have a higher incidence of diabetes but less reliable access to care. To improve marginalized diabetics' access to care, advocacies work with pharmaceutical companies, public agencies, and the healthcare sector. In response to such public pressure, pharmaceutical companies have lowered insulin prices. Advocacies and health agencies also serve marginalized diabetics through programs that support self-management of diabetes.